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☐ 1: Reactive Oxygen Species

[Links](#)

Molecules or ions formed by the incomplete one-electron reduction of oxygen. These reactive oxygen intermediates include SINGLET OXYGEN; SUPEROXIDES; PEROXIDES; HYDROXYL RADICAL; and HYPOCHLOROUS ACID. They contribute to the microbicidal activity of PHAGOCYTES, regulation of signal transduction and gene expression, and the oxidative damage to NUCLEIC ACIDS; PROTEINS; and LIPIDS.

Year introduced: 1993

Subheadings: This list includes those paired at least once with this heading in MEDLINE and may not reflect current rules for allowable combinations.

- ☐ administration and dosage
- ☐ adverse effects
- ☐ agonists
- ☐ analysis
- ☐ antagonists and inhibitors
- ☐ blood
- ☐ cerebrospinal fluid
- ☐ chemical synthesis
- ☐ chemistry
- ☐ classification
- ☐ diagnostic use
- ☐ history
- ☐ immunology
- ☐ isolation and purification
- ☐ metabolism
- ☐ pharmacokinetics
- ☐ pharmacology
- ☐ physiology
- ☐ poisoning
- ☐ radiation effects
- ☐ therapeutic use
- ☐ toxicity
- ☐ urine

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Entry Terms:

- Pro-Oxidants
- Pro Oxidants
- Oxygen Radicals
- Active Oxygen
- Oxygen, Active
- Oxygen Species, Reactive

See Also:

- [Free Radicals](#)
- [Oxidative Stress](#)

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Chemicals and Drugs Category

Inorganic Chemicals

Oxygen Compounds

Reactive Oxygen Species

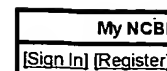
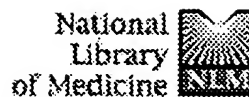
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☐ **1: Singlet Oxygen**

Links

An excited state of molecular oxygen generated photochemically or chemically. Singlet oxygen reacts with a variety of biological molecules such as NUCLEIC ACIDS, PROTEINS, and LIPIDS causing oxidative damages.

Year introduced: 2002

Subheadings: This list includes those paired at least once with this heading in MEDLINE and may not reflect current rules for allowable combinations.

- ☐ adverse effects ☐ analysis ☐ antagonists and inhibitors ☐ blood ☐ chemistry ☐ history ☐ metabolism
☐ pharmacology ☐ physiology ☐ radiation effects ☐ toxicity

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Registry Number: 17778-80-2

Entry Terms:

- Oxygen, Singlet
- Singlet Dioxygen
- Dioxygen, Singlet

Previous Indexing:

- [Oxygen \(1967-2001\)](#)

Pharmacologic Action:

- [Oxidants](#)

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singlet molecular oxygen

The oxygen molecule (dioxygen), O₂, in an excited singlet state. The ground state of O₂ is a triplet $^3\Sigma_g^-$. The two metastable singlet states derived from the ground state configuration are $^1\Delta_g$ and $^1\Sigma_g^+$.

The term singlet oxygen alone, without mention of the chemical species is discouraged since it can also refer to an oxygen atom in a 1S or 1D excited state. While the oxygen atom ground state is a triplet 3P state, the 1S and 1D states are also derived from the ground state configuration.

1996, 68, 2273